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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,199	07/14/2003	Todd C. Adelman	200310022-1	6368

7590 07/21/2006  
HEWLETT-PACKARD COMPANY  
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EXAMINER

GOMA, TAWFIK A

ART UNIT PAPER NUMBER

2627

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/619,199	ADELMANN, TODD C.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tawfik Goma	2627	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

This action is in response to the amendment filed on 6/1/2006.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-8, 10-12, 14-18, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Binnig et al (US 5835477).

Regarding claim 1, 14 and 19 Binnig discloses a storage device, system and method comprising: a probe (all 6 tips together form a probe, fig. 5a) having plural tips (46, fig. 5A); and a storage medium having a surface in which storage cells (33, fig. 3) are to be formed (fig. 8), the plural tips of the probe to form plural perturbations in the surface in at least one of the storage cells for representing a data bit (figs 5a, 6).

Binning discloses that plural perturbations are formed in each cell by the plural tips, wherein each tip forms a data bit, which reads on the claim language.

Regarding claim 3 and 15, Binnig further discloses wherein the probe comprises a cantilever with the tips attached to and extending outwardly from the cantilever (col. 3 lines 19-27 and col. 8 lines 66 thru col. 9 line 1).

Regarding claim 4, Binnig further discloses wherein the probe is adapted to scan the perturbations of the at least one storage cell with at least one of the tips to

detect a state of the data bit as being either a logical "0" or logical "1." (col. 5 lines 31-53 and col. 6 lines 58-63)

Regarding claim 5, Binnig further discloses wherein presence of at least one perturbation in a storage cell represents a first state of the data bit, and absence of perturbations in a storage cell represents a second state of the data bit, the storage device further comprising a detector to indicate that the at least one storage cell contains a data bit at the first state in response to the probe detecting at least one of the redundant perturbations (41, 42, 43, figs. 4, 5A and col. 8 lines 43-58) .

Regarding claim 6 and 20, Binnig further discloses a second probe, the second probe having plural tips to form plural perturbations in the surface in another storage cell to represent a second data bit (col. 13 lines 1-9).

Regarding claim 7 and 17, Binnig further discloses wherein the probe is part of an array of probes; each probe in the array of probes having plural tips (fig. 8 and col. 13 lines 1-9).

Regarding claim 8 and 21, Binnig further discloses a substrate in which the probe is formed (col. 3 lines 23-25); and an actuator to move at least one of the substrate and the storage medium to adjust relative positions of the substrate and the storage medium (col. 5 lines 55-66n and col. 6 lines 7-22).

Regarding claim 10, Binnig further discloses wherein the tips of the probe are in contact with the surface of the storage medium to form the perturbations (col. 11 lines 39-46 and claim 4).

Regarding claim 11, Binnig further discloses wherein the tips of the probe are heated to form dents in the surface, the perturbations comprising the dents (col. 4 lines 45-47).

Regarding claim 12, Binnig further discloses wherein fewer than all of the tips of the probe are in contact with the surface of the storage medium to perform a read (col. 6 lines 7-22).

Regarding claim 16, Binnig further discloses wherein the probe is adapted to read the two perturbations of the at least one storage cell with at least one of the tops to detect a state of the data bit (fig. 5). Binnig discloses wherein two of the data bits can be read by two of the tips which reads on the claimed language.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Binnig et al (US 5835477) in view of Miyazaki et al (US 5412597).

Regarding claim 13, Binnig further disclose wherein the probe comprises a cantilever to which the tips are attached, the cantilever being actuated to a different positions to engage the fewer than all of the plural tips of the probe to contact the surface of the storage medium (col. 6 lines 27-37). Binning fails to disclose wherein the cantilever is actuated to a slanted position. In the same field of endeavor, Miyazaki

discloses actuating a cantilever to a slanted position to detect the slope of the recording medium (fig. 21). It would have been obvious to one of ordinary skill in the art to modify the actuator disclosed by Binnig with the operation disclosed by Miyazaki. The rationale is as follows: One of ordinary skill in the art would have been motivated to actuate the cantilever to a slanted position in order to detect a slant of the recording medium (col. 23 lines 21-32).

Claims 2, 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Binnig (US 5835477) in view of Albrecht et al (US 2003/0218960).

Regarding claims 2, 9 and 18, Binnig further discloses wherein the probe is adapted to form plural groups of perturbations on the surface of the storage medium to write plural data bits in respective storage cells, and the actuator is adapted to scan the probe over the plural groups of perturbations to read the data bits (fig. 6, 8 and col. 5 lines 55-60). Binning fails to disclose wherein the groups of data bits are redundant data bits. In the same field of endeavor, Albrecht discloses recording redundant data bits (fig. 4 and pars. 109 and 143). It would have been obvious to one of ordinary skill in the art to modify the recording system disclosed by Binning with the method of recording redundant data as taught by Albrecht. The rationale is as follows: One of ordinary skill in the art at the time of applicant's invention would have been motivated to provide redundant data in order to account for random disturbances (see Albrecht par. 143).

***Response to Arguments***

Applicant's arguments filed 6/1/2006 have been fully considered but they are not persuasive. Regarding applicant's argument that Binnig does not teach a probe with plural tips as opposed to plural probes with plural tips, the examiner asserts that the array of "probes" in fig. 5a can be interpreted as a single probe with plural tips (46, fig. 5a) since they can all be mounted together (col. 8 lines 66-67 thru col. 9 line 1). Therefore, Binnig discloses a probe (the entire array in fig. 5a, and col. 8 lines 66-67 thru coll. 9 line 1) with plural tips as claimed in claims 1, 14 and 19.


Further in regard to claims 1, 14 and 19, applicant's arguments that Binnig does not disclose plural tips form plural perturbations for representing "a" data bit are not persuasive because the claim language "a data bit" does not limit the claim to applicant's interpretation presented in the argument. The claim as it stands can be interpreted to mean that plural perturbations are formed in each cell, wherein each perturbation within the cell represents a data bit. The claim does not recite that the plural perturbations are formed for representing 'only a single data bit' or something to that effect. Furthermore, the claims recites that the perturbations are formed "in at least one of the storage cells," therefore, two perturbations for example can be formed in two storage cells such that each cell only contains one perturbation formed by each tip. There is no claim language that limits the claim such that plural perturbations are formed to represent only a single data bit. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
T. Goma  
7/18/2006

  
THANG V. TRAN  
PRIMARY EXAMINER